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FINANCIAL MARKETS IN RURAL NIGER :

THE BOUNDARIES OF INSTITUTIONS

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FINANCIAL MARKETS IN RURAL NIGER : THE BOUNDARIES OF INSTITUTIONS

1. Introduction

The institutional financial system of Niger is very underdeveloped. There are only 27 bank branches in the country, which represents approximately one bank branch for every 226 thousand inhabitants, undoubtedly one of the lowest ratios in the world. One of the poorest countries in Asia, Bangladesh has a ratio of one branch for about 25 thousand people, while one of the poorest countries in Latin America, Honduras, has one bank branch for every 15 thousand inhabitants. Even though about 90 percent of the Nigerien population lives in the rural sector, one-third of the bank branches are located in the capital city. Therefore the provision of financial services by formal institutions is even more limited in the rural areas than it is in the urban centers.

This paper documents and analyzes the functioning of financial markets in the rural areas of Niger. The study discusses the prevalence and importance of formal and informal financial transactions at the household level. Emphasis is given to the analysis of institutional limitations in the provision of financial services to rural households.

The discussion draws upon data obtained in an extensive field survey of rural households undertaken in 1985. The next section presents a brief overview of the rural household,

emphasizing the assessment of income levels. The relative importance of institutional *versus* non-institutional (or informal) credit is discussed in Section 3. A note on financial savings at the household level is included as Section 5. Some concluding remarks and implications are presented in the final section.

2. Overview of the Rural Household

A total of 898 interviews were carried out between July and August 1985 in five departments of Niger: Niamey, Dosso, Tahoua, Maradi, and Zinder. This total number of interviews will be referred to as the "overall sample" and is comprised by five sub-samples. The first sub-sample, of 398 households, was drawn at random in 14 "arrondissements" of the departments indicated above. A second sub-sample consisted of 44 village-leaders ("notables"), who were interviewed in the same villages, randomly selected for the first sub-sample. The third sub-sample corresponded to 69 women selected at random in these same villages. The other two sub-samples were obtained from different sample frames, and were included in the survey for specific purposes. The loan records of the "Caisse Nationale de Crédit Agricole" (CNCA) were the basis for the selection of the fourth sub-sample, that consisted of 230 credit beneficiaries. The purpose of this sub-sample was to obtain a significant number of cases for the documenting of procedures and transaction costs

associated with institutional loans. Finally, a total of 157 households were selected for interviews in seven villages participating in specific projects carried out by two regional research institutions (INRAN-ICRISAT). The data on financial transactions obtained in this sub-sample will complement the detailed household information that these two institutions are recording in their respective areas. Results pertaining to this last sub-sample will not be discussed in this paper, and are only included for reference.

The main characteristics of the sample in terms of its regional and ethnic coverage, and some major features of the households such as household size and literacy levels are described in tables A.1 through A.8 of the Appendix. The remainder of this section focuses on the economic activity of rural households. Emphasis is given to documenting the main crop and livestock enterprises undertaken by households, and estimating the value of production, physical assets, and income flows obtained from agriculture.

Crop production was the most important agricultural activity for the households included in the survey. Eighty percent of the respondents declared having grown at least one crop in the crop season preceding the date of the interview, 62 percent had cultivated two or more crops in the same season[1]. Rainfed agriculture predominated, since 96 percent of the respondents had

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[1] Figures and proportions reported in this section are based on the random sub-sample, unless otherwise indicated.

non-irrigated fields. Millet, sorghum, cowpeas, and rice were the most important crops.

Seventy percent of the households owned some type of livestock, almost one half of the respondent declared having two or more types of animals. Among other physical assets the survey obtained information about ox-carts and donkey-carts. Only 10 percent of the households declared having an ox-cart, and less than 7 percent had donkey-carts. In order to obtain an estimation of the value of agricultural assets, livestock were evaluated using the average market prices registered in the different departments in 1984, and some assumptions about the composition of the herds by age categories. Carts were valued at their reported cost as inputs for 1984. The value of agricultural assets, estimated with these two components, is a lower-bound estimate of total household assets, since it does not include other agricultural equipment and tools, other inputs, and other non-agricultural assets owned by the household. However, the two items considered in the estimation, livestock and carts, are the components of total assets most likely to generate a significant flow of income.

The estimated mean values of livestock and agricultural assets (livestock and carts) are reported in Table 1 for the different sub-samples, along with the estimated mean values of crop production for the season preceding the date of the interview. The mean value of agricultural income also reported in this table was computed as the sum of the value of crops plus the

TABLE 1

MEAN VALUES OF AG. INCOME AND AG. ASSETS BY SUB-SAMPLE, CFA FRANCS 1984

	MEAN VALUE OF CROPS	MEAN VALUE OF LIVESTOCK	MEAN VALUE OF AG. ASSETS	MEAN VALUE OF AG. INCOME
SUB-SAMPLE				
RANDOM	143029.70	70907.94	84483.81	159926.46
LEADERS	289022.57	153342.95	184189.13	325760.39
WOMEN	21147.38	27742.41	30278.64	27203.11
CNCA BORROWERS	238093.49	114855.34	189243.55	276486.91
INRAN-ICRISAT	140270.71	127526.40	142314.86	169632.86

Source: OSU Survey, 1985

income flow generated by agricultural assets, estimated as 20 percent of the value of these assets. Table 1 shows important differences among the different sub-samples. Using as a level of reference the value of agricultural income estimated for the random sub-sample, the group of village leaders enjoys an average income twice as high as the random group of village households in which they belong. The income of the CNCA borrowers was 73 percent higher than that estimated for the random sub-sample. The INRAN-ICRISAT group showed average figures for value of crops and agricultural income very similar to the random group of households.

It is important to keep in mind that the above discussion relates only to agricultural income. Thus this is a lower-bound estimate of total income since, in the majority of the cases, other sources of income exist. Sixty percent of the households in the random sub-sample indicated that they received income from another non-agricultural source. For one-fifth of these households the other source of income was more important than the revenue obtained from agricultural activities and, in ten percent of the cases, the non-agricultural source was as important as agriculture in generating total household income. Reliance upon non-agricultural sources of income was found less important among high and medium-high income levels as defined above, but differences across income categories were not substantial. For example, the highest income-level category shows 49 percent of the cases receiving income from other sources (as compared to 60

percent average for all households) and among these, the other source was more important than agriculture in 16 percent of the cases.

A summary assessment of the results discussed above indicates that the rural population represented in the survey can be characterized as very poor in absolute terms. If mean agricultural incomes are related to average household size, per capita figures amount to 22,750 CFA francs per year (about 65 US dollars) for the random sub-sample, and just over 30,000 CFA francs per capita (88 US dollars) for the CNCA sub-sample. Only the sub-sample of village leaders shows per-capita agricultural income over 100 US dollars per year. Thus reliance on non-agricultural activities becomes important for a majority of the households to improve their income situation. The following sections will now document to what extent and in what ways financial transactions contribute to the operations of rural households.

3. Institutional and Non-Institutional Credit at the Household Level: Access and Magnitudes

The survey gathered basic information about four aspects of institutional credit in rural areas: first, access to institutional loans over the last five years; second, amounts and distribution of the most recent loans obtained by farmers; third, terms, conditions, and procedures associated with these loans;

and fourth, the borrower's non-interest transaction costs implied by these terms, conditions, and procedures. This chapter will cover the first two aspects of this subject, leaving analysis of the terms, procedures, and transaction costs borne by the borrowers to a separate paper[2].

The findings on access to institutional credit by rural households, and amounts borrowed from institutions are presented first. Then the main features of informal transactions are described, and the structure of the household's total indebtedness is summarized.

3.1. Access to Institutional Credit, 1980-1984

A majority of the households had received at least one loan during the five-year period preceding the date of the interview. Table 2 shows the distribution of the number of loans received in this period for the overall sample, and the different sub-samples. Overall, 37 percent of the respondents had not received a loan between 1981 and 1985, i.e., 63 percent obtained credit from institutions at least once in this five-year period. However, this overall indicator of access is upwardly biased because of the inclusion of the CNCA-borrowers sub-sample in the overall sample. This sub-sample was intentionally drawn from the records of the CNCA to obtain information about loans and borrowing costs, therefore the expected proportion of no-loans in

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[2] Cuevas, C.E. "Transaction Costs of Rural Credit in Niger", Ohio State University, forthcoming November 1986.

TABLE 2

NUMBER OF INSTITUTIONAL LOANS OBTAINED BY INDIVIDUAL BORROWERS
IN THE LAST FIVE YEARS, BY SUB-SAMPLE

	NUMBER OF LOANS IN LAST FIVE YEARS															
	NONE		ONE		TWO		THREE		FOUR		FIVE		MORE THAN FIVE		ALL	
	N	PCT	N	PCT	N	PCT	N	PCT	N	PCT	N	PCT	N	PCT	N	PCT
SUB-SAMPLE																
RANDOM	182	45.73	117	29.40	48	12.06	22	5.53	12	3.02	7	1.76	10	2.51	398	100.00
LEADERS	11	25.00	14	31.82	3	18.18	.	.	4	9.09	3	6.82	4	9.09	44	100.00
WOMEN	69	100.00	.	.	.	.	.	.	.	.	.	.	.	.	69	100.00
CNCA BORROWERS	12	5.22	127	55.22	45	19.57	22	9.57	6	2.61	7	3.04	11	4.78	230	100.00
INRAN-ICRISAT	57	36.31	39	24.84	34	21.66	12	7.64	4	2.55	5	3.18	6	3.82	157	100.00
ALL	331	36.86	297	33.07	135	15.03	56	6.24	26	2.90	22	2.45	31	3.45	898	100.00

Source: OSU Survey, 1985

the first column of Table 2 for this sub-sample was zero. Twelve CNCA borrowers however (5.2 percent of the sub-sample) did not acknowledge receipt of any loans.

A more accurate estimate of access to formal loans for rural households is obtained observing the findings for the random sub-sample. Almost half of the households did not receive a single loan in the last five years, 54 percent obtained at least one loan, only 4 percent had "regular" access to credit, since they received five or more loans over this same period (see the last two columns in Table 2). Overall, the respondents in the random sub-sample obtained a total of 446 loans in the last five years, an average of 89 loans per year for the 398 households that comprise this random sub-sample. This represents an average access rate of 22.4 percent, or, on average 22.4 percent of the farmers have access to institutional loans.

An important qualification needs to be introduced here, since loans are not a homogeneous commodity. A large number of small seed-loans is included in the loan count used to arrive at the access rate indicated above. This type of loan has been granted primarily in recent years and could be better described as a routine input delivery in which small quantities of seed are distributed with a minimum of formalities. Furthermore, as will be documented later in this section, the CFA equivalent value of these loans is considerably smaller than the average amounts for the other types of loans received by farmers. If these seed loans are subtracted from the total number of loans received by the

households in the random sub-sample, the average access to institutional credit reduces to 15.3 percent. This is still an "upper-bound" estimate since the questionnaire could identify the type of loan only for the most recent loan received by the respondent. Seed loans received during the five-year period in question that were not the most recent for the farmer went undetected. With this final qualification, we can assert that each year an "upper bound" average of about 15 percent of rural households in the random sub-sample had access to meaningful institutional loans.

As shown in Table 2, village leaders and households in the INRAN-ICRISAT sub-sample had better access to institutional credit than the randomly selected households. Women had no access to this type of credit in the last five years according to this survey.

A comparison of access to formal credit between households in different income-level categories is presented in Table 3 [3]. Rather surprisingly, households in the lowest income category appear to have the best access, since two-thirds of this group received at least one loan in the last five years, as compared to only one-third of the respondents in the highest income-level class. These figures again consider all loans received, without distinction between different loan types and amounts. As will be

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[3] Categories defined according to the quartiles of the distribution of income in the random sub-sample, therefore each category includes one-fourth of the observations in this sub-sample.

TABLE 3

RANDOM SUB-SAMPLE. NUMBER OF INSTITUTIONAL LOANS OBTAINED BY INDIVIDUALS IN THE LAST FIVE YEARS, BY INCOME LEVEL (BASED ON AGRICULTURAL INCOME ESTIMATED FOR 1984. INCOME LEVELS DEFINED BY QUARTILES OF INCOME DISTRIBUTION)

	NUMBER OF LOANS IN LAST FIVE YEARS															
	NONE		ONE		TWO		THREE		FOUR		FIVE		MORE THAN FIVE		ALL	
	N	PCT	N	PCT	N	PCT	N	PCT	N	PCT	N	PCT	N	PCT	N	PCT
INCOME LEVEL (AGRICULTURE)																
HIGH-(OVER 200740 CFA/YR)	60	65.22	19	20.65	4	4.35	2	2.17	4	4.35	2	2.17	1	1.09	92	100.00
MEDIUM HIGH (93625-200740 CFA/YR)	37	39.78	27	29.03	15	16.18	6	6.45	2	2.15	1	1.08	5	5.38	93	100.00
MEDIUM-LOW (33234-93625 CFA/YR)	38	40.86	30	32.26	12	12.90	5	5.38	4	4.30	2	2.15	2	2.15	93	100.00
LOW-(UNDER 33234 CFA/YR)	31	33.70	33	35.87	15	16.30	8	8.70	2	2.17	2	2.17	1	1.09	92	100.00
ALL	166	44.86	109	29.46	46	12.43	21	5.68	12	3.24	7	1.89	9	2.43	370	100.00

Source: OSU Survey, 1985

discussed below, the pattern of credit distribution by income level looks different when loan amounts are considered.

3.2. Types and Amounts of Institutional Loans

Detailed information was obtained about the most recent loan obtained by the farmer, provided that it had been received in or after 1980. In most cases the respondent did not remember or did not know the equivalent amount of the loan (in CFA francs), therefore this amount was calculated (in all cases) evaluating the inputs included in the loan at the prices prevailing in the year the loan was obtained[4]. The amounts calculated are used in the following discussion.

Types of loans were classified in three categories. Their average amounts are reported in Table 4 for the overall sample, and the different sub-samples that received institutional credit. Equipment and Input loans include all farming equipment that normally comprise the so called "technology packages", oxen, and cattle. Seed loans correspond to small amounts of millet seed and occasionally sorghum seed. A small number of loans that included both some equipment (and/or animals) and seeds are labeled "mixed" loans, and were merged with the first type of loans for the purposes of this presentation. Finally, a reduced number of

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[4] In most of the cases where the respondent indicated a loan amount in CFA, this amount was smaller than the amount calculated through the evaluation of inputs received.

TABLE 4.

NUMBER AND AMOUNT OF LOANS BY TYPE OF LOAN, BY SUB-SAMPLE

	TYPE OF LOAN							
	EQUIPMENT & INPUTS (INCL. MIXED LOANS)		SEED LOANS		CASH LOANS		ALL LOANS	
	N	MEAN(CFA)	N	MEAN(CFA)	N	MEAN(CFA)	N	MEAN (CFA)
SUB-SAMPLE								
RANDOM	44	56410.73	132	958.20	4	53125.00	180	15915.94
LEADERS	8	105286.88	21	858.33	1	10000.00	30	29030.67
CNCA BORROWERS	171	154686.32	5	1444.80	6	45208.33	182	149264.05
INRAN-ICRISAT	17	77489.41	70	910.36	3	89000.00	90	18361.39
ALL	240	129554.37	228	944.99	14	54339.29	482	67540.19

Source: OSU Survey, 1985

loans in cash were reported by some of the respondents, thus defining the third type of loan included in Table 4.

Average loan amounts are substantially different between loan types, and across sub-samples, as Table 4 shows very clearly. Overall, the average CFA value of equipment-inputs loans is considerably larger than that of seed loans. Indeed, the reduced average amount of seed loans makes their significance as agricultural credit questionable. This is the type of loan that was reported as the most recent loan by the majority of households with credit in all sub-samples, excepting the CNCA-borrower sub-sample.

An important contrast stands out in Table 4 between the average amount of loans received by the CNCA sub-sample and those obtained by the random group. CNCA borrowers record an average loan size about ten times as large as that registered by borrowers in the random sub-sample. This striking difference is explained not only because the majority of loans documented for the CNCA group were equipment loans, but also because, within each loan type excepting cash loans, the average amount is also considerably larger for this group than it is for the borrowers in the random sub-sample. If these average loan amounts are related to the average agricultural incomes estimated in this study (see Table 1 above), the credit-to-income ratios for households receiving formal loans are in the order of 9 to 10 percent for all sub-samples, excepting the women sub-sample (zero loans) and the CNCA sub-sample, where this ratio is approximately

54 percent. Even if only the average value of equipment loans is considered to avoid the bias introduced by the different importance of seed loans across sub-samples, the ratio of loan value to annual income is still considerably higher for the CNCA sub-sample, 56 percent, than for the random sub-sample, 35 percent. The INRAN-ICRISAT group shows a ratio of almost 46 percent, whereas for village leaders the ratio of loan amount to annual income is about 32 percent.

The loans most recently received by the respondents were classified into four loan-size categories. These categories were defined using the quartiles of the loan-size distribution, so that each category includes one-fourth of the loans in the overall sample. The distribution of these loan-size categories is compared against the income-level distribution defined above (Table 3). This relationship is presented in Table 5. There is a clear, yet not strong, association between income level and loan size. The borrowers in the highest income category receive loans primarily in the highest loan-size categories. Seventy five percent of all loans received by households in this income level are in the two highest loan-size categories. However, there is a good proportion of very small loans received in this income group (14 percent). Most of the loans received in the lowest income-level category are in the two smallest loan-size categories (70 percent of the total), but this income group is also represented in the higher loan-size categories. The intermediate income categories show fairly homogeneous distributions by loan size,

TABLE 5

OVERALL SAMPLE: DISTRIBUTION OF INSTITUTIONAL LOANS
BY LOAN-SIZE CATEGORY, BY INCOME LEVEL OF THE BORROWER

	LOAN SIZE									
	OVER 11300 CFA		9000-113000 CFA		400-9000 CFA		LESS THAN 400 CFA		ALL	
	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT
INCOME LEVEL (AGRICULTURE)										
HIGH-(OVER 200740 CFA/YR)	34	34.00	41	41.00	11	11.00	14	14.00	100	100.00
MEDIUM-HIGH (93625-200740 CFA/YR)	35	29.17	33	27.50	26	21.67	26	21.67	120	100.00
MEDIUM-LOW (33234-93625 CFA/YR)	38	27.94	26	19.12	36	26.47	36	26.47	136	100.00
LOW-(UNDER 33234 CFA/YR)	12	10.81	20	18.02	42	37.84	37	33.33	111	100.00
ALL	119	25.48	120	25.70	115	24.63	113	24.20	467	100.00

Source: OSU Survey, 1985

though still following the pattern of association between loan size and income level suggested by the extreme income-level categories.

The absence of a strong association between income level and loan size suggests the absence of a typical banker's criteria in credit allocation. There is no evaluation procedure of individual loan applications where loan amounts are decided taking into account expected revenues, collateral, and other conventional evaluation criteria. Once a cooperative, or a "groupement mutualiste" (GM)[5], is granted a loan, all individuals participating in the loan will most likely receive the same quantities of inputs, thus loans of equal amounts. Income level becomes a factor to the extent that it can affect the influence an individual may have on loan allocation inside the GM or cooperative. However, the other findings reported in this section suggest that village-wide income levels and wealth may be a consideration in deciding credit allocation among cooperatives, as opposed to within cooperatives. This is to say, cooperatives or GMs comprised by individuals with relatively high incomes and wealth may become eligible for relatively large loans. Each individual member of these wealthier cooperatives will then receive a larger loan than that obtained by members of a less affluent organization.

The findings reported in this section indicate that access to institutional credit is limited among rural households. At

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[5] Village-level organizations that comprise a cooperative.

best, about 22 percent of these households obtain a loan in an average year. The average amount of these loans do not represent more than 10 percent of the household's average agricultural income. The borrowers in the CNCA sub-sample benefit from relatively larger loans in relation to the average amounts received by the randomly selected households. Furthermore, the relative importance of borrowed funds with respect to the agricultural income of CNCA borrowers is about five times as high as that recorded for households in the random sub-sample.

An estimate of the overall ratio of agricultural credit to agricultural output can be obtained by multiplying the credit access rate (22.4 percent) by the average credit-to-income ratio found for the households receiving loans (9.95 percent). The estimated ratio of agricultural credit to agricultural output results 2.23 percent, a proportion very similar to the ratio of rural credit to rural GDP that can be calculated from official macro-economic statistics. The average ratio calculated from this source for the period 1980-1983 was 2.05 percent[6].

3.3. Non-Institutional Credit

When access to institutional credit is somewhat restricted and not very significant, it becomes important to investigate the non-institutional (or informal) financial transactions that are likely to take place in rural areas. This section documents the

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[6] Calculated from statistics published by the Ministry of Planning, "Bulletin Statistique", 1985.

informal transactions performed by the rural households included in this survey. Their informal borrowing activities are considered, along with the role of heads of households as suppliers of loans and assistance to other members of the rural community.

(a) Informal Borrowing

The households included in this survey received loans or assistance from several non-institutional sources in the 12-month period preceding the date of the interview. A summary of the number of sources of loans or aid to the households in the random sub-sample is presented in Table 6. This table summarizes the informal borrowings undertaken by both the head of the household and the spouse. Overall, only 16 percent of the heads of households did not receive any non-institutional assistance in the preceding year, i.e., a vast majority of them (84 percent) obtained loans or assistance from at least one source.

The most important source of loans or assistance was relatives. Over fifty percent of the overall sample had received aid from this source, without major variations across sub-samples. Friends and neighbors were mentioned as sources of assistance in 30 percent of the interviews. Almost one-fifth of the heads of households interviewed included traders and merchants among their sources of informal loans or assistance. Finally, one-half of the respondents indicated other

TABLE 6

INFORMAL BORROWING. NUMBER OF SOURCES OF LOANS AND ASSISTANCE FOR THE HOUSEHOLD, RANDOM SUB-SAMPLE

	INFORMAL LOANS FOR SPOUSE (LAST 12 MONTHS)											
	NONE		ONE		TWO		THREE		FOUR		ALL	
	N	PERCENT OF TOTAL	N	PERCENT OF TOTAL	N	PERCENT OF TOTAL	N	PERCENT OF TOTAL	N	PERCENT OF TOTAL	N	PERCENT OF TOTAL
INFORMAL LOANS FOR HEAD OF HOUSEHOLD (LAST 12 MONTHS)												
NONE	55	13.82	7	1.76	2	0.50	.	.	.	.	64	16.00
ONE	113	28.39	12	3.02	6	1.51	2	0.50	.	.	133	33.42
TWO	91	22.86	19	4.77	16	4.02	5	1.26	.	.	131	32.91
THREE	32	8.04	7	1.76	11	2.76	3	0.75	.	.	53	13.32
FOUR	12	3.02	.	.	4	1.01	.	.	1	0.25	17	4.27
ALL	303	76.13	45	11.31	39	9.80	10	2.51	1	0.25	398	100.00

Source: OSU Survey, 1985

miscellaneous sources of assistance, among which they included emergency aid from various organizations[7].

The predominant form of informal borrowing was in grains, primarily millet and sorghum. Almost seventy percent of the respondents that received some assistance in the last year mentioned grains as one of the forms in which they received it. About 48 percent had obtained help in cash, and 10 percent of the heads of households indicated other forms of informal borrowing, including different types of livestock[8].

Even though spouses did not have access to institutional credit, they did reported receiving informal loans or assistance. Table 6 shows that about one-fourth of the spouses in the random sample obtained aid from at least one source in the year preceding the interview. This finding implies that access to informal loans or assistance by the household as a whole (i.e., heads of households and spouses) is even wider than that indicated above for heads of households. Indeed, the proportion that needs to be highlighted here is found at the top left-hand corner of this table. Only 14 percent of the households did not receive any informal loan or assistance in the past year, i.e., over 86 percent of the households in the random sub-sample

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[7] The sum of the percentages reported in this paragraph exceeds 100 percent due to the existence of multiple sources of loans or assistance for many households.

[8] This time the sum exceeds 100 percent because some informal borrowing included more than one form, e.g., grains and cash.

obtained at least one form of aid in this period, either through informal borrowing by the head of household, or through informal borrowing by the spouse.

Despite the wide variety of forms and units of measurement under which informal borrowing occurred (more than five types of grains measured in about ten different units, three types of livestock, etc.) an estimation of the CFA-equivalent amount of informal borrowing was attempted with the information obtained in the interviews. When possible, loans received in kind, primarily grains, were evaluated at the retail prices of the items in question, since this was considered the best estimate of the opportunity cost of these commodities. The average amount of loans and assistance obtained by heads of households is reported for the different sub-samples in Table 7. The overall sample average and the average for the random sub-sample are very similar, a little over 31 thousand CFA francs per loan. As components of this weighted average, loans or aid in cash and loans or assistance in kind had similar average amounts.

(b) Informal Lending

A large number of heads of households had provided informal loans or assistance to other members of their rural communities. Table 8 shows that two-thirds of the interviews in the overall sample provided some kind of help to others during the twelve months preceding the survey. The proportion observed in the random sub-sample and in the CNCA sub-sample are essentially the

TABLE 7

INFORMAL BORROWING. AVERAGE VALUE OF LOANS AND ASSISTANCE RECEIVED BY HEADS OF HOUSEHOLDS, BY SUB-SAMPLE

	VALUE OF LOANS AND ASSISTANCE	
	N	MEAN (CFA)
SUB-SAMPLE		
RANDOM	303	31757.24
LEADERS	35	39809.25
WOMEN	31	35633.06
CNCA BORROWERS	171	36934.86
INRAN-ICRISAT	147	21556.63
ALL	687	31448.44

Source: OSU Survey, 1985

TABLE 8

INFORMAL LENDING, LOANS OR ASSISTANCE PROVIDED
TO OTHERS BY THE HEAD OF HOUSEHOLD, BY SUB-SAMPLE

	LOANS OR ASSISTANCE LAST 12 MONTHS					
	DID PROVIDE		DID NOT PROVIDE		ALL	
	N	PERCENT	N	PERCENT	N	PERCENT
SUB-SAMPLE						
RANDOM	261	65.58	137	34.42	398	100.00
LEADERS	33	75.00	11	25.00	44	100.00
WOMEN	33	47.83	36	52.17	69	100.00
CNCA BORROWERS	151	65.65	79	34.35	230	100.00
INRAN-ICRISAT	127	80.89	30	19.11	157	100.00
ALL	605	67.37	293	32.63	898	100.00

Source: OSU Survey, 1985

same as that observed for the overall sample. An even larger percentage of the village-leaders sub-sample and of the households in the INRAN-ICRISAT sub-sample had provided loans or assistance in the last year.

Among the households that did provide loans or assistance, almost 80 percent did so to relatives, and 15 percent to friends or neighbors. Half of the loans or assistance were provided in kind, about 22 percent in cash and 28 percent in a combination of both. Less than two percent of the respondents that supplied loans or assistance to others acknowledged having charged interest. The average amount of the loans or aid provided was the equivalent of 21,000 CFA francs, according to the estimation of the respondent.

There was a consistent association between the frequency of cases that provided informal loans or assistance and the income level of the respondent. However, these differences across income categories are not substantial. Even in the lowest income-level class 62 percent of the respondents had provided some assistance to others in the last twelve months, as compared to 76 percent in the highest income category. This indicates that informal lending and assistance among rural households is a very widespread activity, with little differences between different income levels.

A more important and interesting relationship exists between access to institutional loans and informal lending. Table 9 shows the number of households providing informal loans or assistance

TABLE 9

INFORMAL LENDING. RELATIONSHIP BETWEEN ACCESS TO INSTITUTIONAL LOANS AND PROVISION OF LOANS TO OTHERS

	LOANS OR ASSISTANCE LAST 12 MONTHS					
	DID PROVIDE		DID NOT PROVIDE		ALL	
	N	PERCENT	N	PERCENT	N	PERCENT
INST. LOANS IN LAST FIVE YEARS						
NONE	209	63.14	122	36.86	331	100.00
ONE	196	65.99	101	34.01	297	100.00
TWO	91	67.41	44	32.59	135	100.00
THREE	47	83.93	9	16.07	56	100.00
FOUR	20	76.92	6	23.08	26	100.00
FIVE	16	72.73	6	27.27	22	100.00
MORE THAN FIVE	26	83.87	5	16.13	31	100.00
ALL	605	67.37	293	32.63	898	100.00

Source: OSU Survey, 1985

in the last twelve months according to their degree of access to formal loans. Even households with no loans in the past five years engaged in some informal lending activity (63 percent of the households in this group). The proportion of respondents performing this activity increased as the access to formal credit improved. On average, two-thirds of the households that received two institutional loans or less in the past five years provided some type of informal loans or assistance. On the other hand, almost eighty percent of the respondents that obtained three or more formal loans in this five-year period engaged in informal lending activities. This relationship between access to institutional credit on the one hand, and supply of informal loans or assistance on the other hand, indicates some degree of transmission of credit supplied by institutional sources through the initial beneficiaries to other members of the rural communities. The increased liquidity gained by the households that obtain formal loans allow them to engage in greater informal lending than they might do if they did not have access to institutional loans.

This section has shown clearly the importance of informal transactions between rural households as a mechanism of transmission and reallocation of liquidity. In a twelve-month period, more than eighty percent of the rural households received some sort of loans or assistance, whereas at least two-thirds of the same households engaged in some form of informal lending or provision of assistance to others. Cash transactions were

important, even though in-kind transactions (primarily grains) were predominant. This should not be surprising since in-kind transactions are likely to be the least costly type of transaction at the village level. Informal borrowing and lending may explain an important part of the use of temporary surpluses generated in rural activities.

3.4. Access to Credit and Total Indebtedness, A Summary

The average magnitude of informal borrowing reported in Table 7 (preceding section) can be contrasted and analyzed with the figures obtained for institutional credit reported in the previous section. This analysis will concentrate on the results for the random sub-sample, since the purpose is to characterize the average (randomly selected) rural household.

As reported in the preceding section, a household in the random sub-sample that received a formal loan obtained on average the equivalent of 15,916 CFA francs (see Table 4). This amount represented almost 10 percent of the household's agricultural income estimated for the year preceding the date of the survey. On the other hand, a randomly selected household that succeeded in borrowing from non-institutional sources received the equivalent of 31,757 CFA francs (Table 7), or almost 20 percent of its annual agricultural income. It follows from the foregoing discussion that a household receiving <u>both</u> types of credit, formal and informal, would obtain an average of 47,673 CFA francs in some combination of cash and kind. This total average amount

represents about 30 percent of the average annual household income from agriculture.

At this point it is important to incorporate the findings related to access to institutional and non-institutional sources of loans or assistance. By doing so it is possible to estimate the weighted average amount of total borrowing for the average randomly selected household. These results are summarized in Table 10. As reported in earlier in this section, an annual average of 22.4 percent of the households in the random group had access to institutional credit, each loan with the average amount indicated in the previous paragraph (15,916 CFA francs). Thus the "expected value" of an institutional loan for the average household becomes 3,565 CFA francs (i.e., 15,916 times 0.224).

A similar computation for the expected value of informal borrowing gives the amount of 26,651 CFA francs. This results from multiplying the average magnitude of an informal loan or assistance (31,757 CFA francs) by the proportion of households in the random sub-sample that engaged in at least one informal borrowing operation (83.92 percent). Therefore, the average amount of formal plus informal borrowing by the average randomly selected household is the equivalent of 30,216 CFA francs. This magnitude represents 18.9 percent of the estimated average annual agricultural income of these households. These calculations also indicate that informal financing or assistance provide about 88 percent of the total indebtedness acquired by the average rural

TABLE 10

NIGER: INSTITUTIONAL AND NON-INSTITUTIONAL BORROWING BY RURAL HOUSEHOLDS

Source	Access % of Households (1)	Average Amount CFA (2)	Expected Borrowing CFA (3)[a]	Percent of Agricultural Income (4)	Share of Each Source % (5)
Institutional	22.4	15,916	3,565	2.2	11.8
Non-Institutional	83.9	31,757	26,651	16.7	88.2
Total			30,216	18.9	100.0

Source: Based on data from OSU survey 1985.

[a] Column (3) is obtained multiplying column (2) by the percentages in column (1).

household, thus highlighting the importance of non-institutional credit arrangements in rural areas.

4. Financial Savings at the Household Level

The provision of deposit services by financial institutions in the rural areas of Niger is very limited. It is restricted to a small number of bank branches in major cities, notably the "Banque de Développement de la Republique du Niger" (BDRN) with 14 branches, and to the post office network, with 47 branches throughout the country. The post office network provides deposit services on behalf of the "Caisse Nationale D'Epargne" (CNE). Given this limited development of formal financial intermediation in the rural areas, it was unlikely that the survey of would find any significant household savings activity involving formal financial institutions. Non-institutional financial savings, if any, and non-financial forms of savings were expected to play a more important role than formal deposits at financial institutions.

A very small proportion of the households included in the survey had some form of financial savings with depository institutions. Only three percent of the respondents in the random sub-sample were holding deposits with institutions on the date of the interview. Of these households, 43 percent had accounts at the post office, i.e., the CNE, and almost 30 percent had their deposits at the BDRN. Other "institutions" indicated in the

interviews were cooperatives and "caisses samarias", that indeed cannot be considered formal financial intermediaries. The use of depository services in institutions was even more limited among the spouses of the respondents. One and one-half percent of the spouses had deposits at a financial institution.

The survey obtained information on the use of local (informal) savings groups or associations as depositories of financial forms of savings by the households. Non-financial forms of savings were detected through a set of questions about the different ways in which the households allocated their operational surpluses. The first part of the discussion in the remainder of this section concentrates on the role of informal groups or associations, and that of money-keepers, as depository entities in rural areas. The second part of this section analyzes the findings on the existence and use of operational surpluses, and the savings potential implicit in these surpluses.

Savings activity in informal savings groups or associations was not important among the households interviewed in the survey. The number of households in the different sub-samples holding deposits in these informal organizations on the date of the survey is shown in Table 11. About 3 percent of the respondents in the overall sample had deposits with a group or association on the date of the interview. The proportion of heads of households with non-institutional (financial) savings was close to 4 percent in the random sub-sample. The sub-sample of women registered the highest rate of use of local groups or associations, almost 6

TABLE 11

NON-INSTITUTIONAL SAVINGS. HOUSEHOLDS HOLDING DEPOSITS AT SAVINGS GROUPS OR ASSOCIATIONS, BY SUB-SAMPLE

	DEPOSITS IN SAVINGS GROUPS/ASSOCIATIONS					
	YES		NO		ALL	
	N	PERCENT	N	PERCENT	N	PERCENT
SUB-SAMPLE						
RANDOM	15	3.77	383	96.23	398	100.00
LEADERS	1	2.27	43	97.73	44	100.00
WOMEN	4	5.80	65	94.20	69	100.00
CNCA BORROWERS	3	1.30	227	98.70	230	100.00
INRAN-ICRISAT	3	1.91	154	98.09	157	100.00
ALL	26	2.90	872	97.10	898	100.00

Source: OSU Survey, 1985

percent. The proportion of spouses of the respondents holding deposits of this kind (not shown in Table 11) was close to 3 percent.

The results discussed above should be taken with caution, since they come from a one-visit interview. It is well known in Niger that the participation of farmers in informal savings groups is highly seasonal, following primarily the seasonal pattern of returns and expenditures associated with agricultural production. Therefore, the results obtained in a single interview are influenced by the particular period of the year in which the survey is undertaken. The fact that the interviews were carried out right before the harvests (July-August) may have induced an under-estimation of the participation of farmers in informal savings activities.

The predominant type of informal group or association was the "tontine", where almost 80 percent of the heads of households with deposits held their savings. Among the spouses, the "tontine" had even more importance. Over 90 percent of the spouses that were holding some informal financial savings on the date of the interview, were doing so by participating in "tontines".

Almost one-third of the respondents knew of the existence of money-keepers in the village or its neighborhood. About 14 percent of the heads of households had used the services of these money-keepers in the year preceding the date of the interview. Among the households that had used these services, one-fourth of

them had remunerated the money-keeper in cash or in kind. However, this proportion does not include the services that individuals are likely to provide to the money-keeper, that are not considered explicit remuneration.

The potential for financial savings exists when there are at least other non-financial forms of savings or accumulation. These in turn depend on the ability of the household to generate an operational surplus from its economic activities. Table 12 shows that approximately 13 percent of the households had obtained some operational surplus in the season preceding the date of the survey. It is important to note here that this refers to overall surplus and does not capture temporary surpluses that may occur during the course of the year. This distinction will be further discussed later.

The predominant uses of surpluses were purchases of grains (68 percent of the households with surplus in the previous year), purchases of other durables (34 percent), purchases of animals (34 percent), and personal savings not in institutions or local organizations (32 percent of the respondents with some surplus)[1]. Eight percent of the households with surplus in the previous year had used it in deposits at savings groups or associations.

As documented in section 3, informal lending and informal borrowing are important mechanisms of transmission and reallocation of liquidity among rural households. This explains

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[1] The sum of the percentages exceeds 100 percent because some households use their surpluses in more than one form.

TABLE 12

HOUSEHOLDS WITH OPERATIONAL SURPLUS IN THE LAST YEAR, BY SUBSAMPLE

	OPERATIONAL SURPLUS LAST YEAR					
	YES		NO		ALL	
	N	PERCENT	N	PERCENT	N	PERCENT
SUB-SAMPLE						
RANDOM	50	12.56	348	87.44	398	100.00
LEADERS	5	11.36	39	88.64	44	100.00
WOMEN	9	13.04	60	86.96	69	100.00
CNCA BORROWERS	30	13.04	200	86.96	230	100.00
INRAN-ICRISAT	28	17.83	129	82.17	157	100.00
ALL	122	13.59	776	86.41	898	100.00

Source: OSU Survey, 1985

in part the reduced role of local savings groups or associations found in the survey, in addition to the seasonality factor referred to above. Temporary surpluses appear to be used in the provision of short-term loans or assistance to other households running a temporary deficit, instead of deposits with savings organizations. The expectation of receiving similar assistance in return at some time in the future substitutes for the explicit return that could be obtained from holding financial forms of savings.

In summary, the results presented in this section indicate that financial savings activities, institutional and non-institutional, were limited among rural households during the period when the interviews were carried out. As discussed earlier, most temporary surpluses are used in informal lending transactions performed in highly liquid commodities, grains and cash. Overall operational surpluses are primarily used in non-financial forms of savings and accumulation. Under these circumstances, the potential role for improved financial intermediation depends upon the lack of coincidence of temporary surpluses and temporary deficits, both geographically and over time. Direct informal financial arrangements are efficient and least costly when surplus units and deficit units coincide in the same place (i.e., in the same village) at the same point in time. However, when these transactions must be performed across long distances, or when liquidity must be "stored" in some form before an informal loan or assistance can be granted, then informal

transactions become more costly to perform and a more formal vehicle for financial intermediation may be justified.

5. Summary and Concluding Remarks

This paper has documented the main features and relative importance of formal and informal financial transactions in the rural areas of Niger, at the household level. The study covers the main regions of the country and the most important ethnic groups comprising its population.

The rural households investigated in this survey had very low agricultural incomes, estimated at the equivalent of 22,750 CFA francs per capita per year (about 65 US dollars). A majority of these households relied upon other non-agricultural sources of revenue to complement their agricultural income.

Access to institutional credit was limited among rural households. At most 22.4 percent of these households obtain a loan in an average year. The average amount of these loans do not represent more than 10 percent of the household's average agricultural income. Thus the implicit ratio of (institutional) agricultural credit to agricultural output is only 2.2 percent, a very low figure in comparison to other low-income countries.

Given the limited significance of formal credit, it was not surprising to find that informal transactions played a very important role in the reallocation of liquidity among rural households. Over 80 percent of the households engaged in some

form of informal borrowing, while two-thirds of the same households provided some type of informal loans or assistance to other members of the rural community. Overall, the value of these informal transactions was considerably more important than institutional credit, since it accounted for almost 90 percent of total borrowing by the households in the survey. Even when institutional and non-institutional credit are pooled together, total borrowing does not represent more than 19 percent of agricultural income for the average household.

Direct informal financial transactions between households predominated over institutional and non-institutional forms of savings. Temporary surpluses were used primarily to alleviate other households' temporary deficits through informal lending. Overall operational surpluses, when they existed, were allocated mainly to non-financial forms of accumulation (physical accumulation of crops and livestock).

Under the circumstances described in this study, the potential role of new or improved financial intermediaries will depend upon the extent to which households with temporary surpluses do not coincide with households with temporary deficits, in the same place and at the same time. Formal financial intermediation could help service these seasonal disequilibria in cash flow needs. More importantly, it could facilitate inter-village or inter-regional intermediation, something that informal finance carries out less efficiently. The relative efficiency of intra-village informal financial

transactions will decrease particularly in the presence of increased liquidity in the system, derived from increased operational surpluses obtained by households, or from inflows of external funds. Any expansion in agricultural activity should seriously consider low-cost alternatives of financial intermediation to complement the positive role of direct informal finance currently predominant in rural areas.

APPENDIX

TABLE 1

OVERALL SAMPLE. OBSERVATIONS BY DEPARTMENT AND ETHNIC GROUP

	DEPARTMENT											
	NIAMEY		DOSSO		TAHOUA		MARADI		ZINDER		ALL	
	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT
ETHNIC GROUP												
HAOUSSA	11	3.93	11	5.42	82	91.11	174	86.14	67	65.05	345	39.29
BERIBERI	1	0.36	1	0.49	1	1.11	3	1.49	34	33.01	40	4.56
DJERMA	178	63.57	188	92.61	.	.	1	0.50	.	.	367	41.80
PEULH	20	7.14	3	1.48	.	.	19	9.41	1	0.97	43	4.90
TOUAREG	63	22.50	.	.	7	7.78	5	2.48	1	0.97	76	8.66
GOURMANTCHE	7	2.50	.	.	.	.	.	.	.	.	7	0.80
ALL	280	100.00	203	100.00	90	100.00	202	100.00	103	100.00	878	100.00

TABLE 2

RANDOM SUB-SAMPLE. OBSERVATIONS BY DEPARTMENT AND ETHNIC GROUP

	DEPARTMENT											
	NIAMEY		DOSSO		TAHOUA		MARADI		ZINDER		ALL	
	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT
ETHNIC GROUP												
HAOUSSA	2	1.69	1	1.43	52	98.11	67	93.06	53	65.43	175	44.42
BERIBERI	1	0.85	.	.	.	.	.	.	26	32.10	27	6.85
DJERMA	59	50.00	69	98.57	.	.	.	.	.	.	128	32.49
PEULH	16	13.56	.	.	.	.	2	2.78	1	1.23	19	4.82
TOUAREG	38	32.20	.	.	1	1.89	3	4.17	1	1.23	43	10.91
GOURMANTCHE	2	1.69	.	.	.	.	.	.	.	.	2	0.51
ALL	118	100.00	70	100.00	53	100.00	72	100.00	81	100.00	394	100.00

TABLE 3 .

OVERALL SAMPLE. NUMBER OF HOUSEHOLDS PER FAMILY AND AVERAGE FAMILY SIZE, BY ETHNIC GROUP

	HOUSEHOLDS-/FAMILY	HOUSEHOLD SIZE
	MEAN	MEAN
ETHNIC GROUP		
HAOUSSA	2.16	7.23
BERIBERI	1.62	4.92
DJERMA	2.43	7.61
PEULH	1.95	6.53
TOUAREG	1.81	6.62
GOURMANTCHE	1.71	8.43
ALL	2.21	7.21

TABLE 4 .

RANDOM SUB-SAMPLE. NUMBER OF HOUSEHOLDS PER FAMILY AND AVERAGE FAMILY SIZE, BY ETHNIC GROUP

	HOUSEHOLDS-/FAMILY	HOUSEHOLD SIZE
	MEAN	MEAN
ETHNIC GROUP		
HAOUSSA	2.11	6.33
BERIBERI	1.44	4.44
DJERMA	2.32	6.30
PEULH	2.00	8.05
TOUAREG	1.66	6.86
GOURMANTCHE	1.00	7.59
ALL	2.06	6.34

TABLE 5 .

OVERALL SAMPLE. LITERACY OF THE HEAD OF HOUSEHOLD

	LITERACY HEAD OF HOUSEHOLD			
	YES		NO	
	N	PERCENT	N	PERCENT
ETHNIC GROUP				
HAOUSSA	124	35.94	221	64.06
BERIBERI	15	37.50	25	62.50
DJERMA	138	37.60	229	62.40
PEULH	12	27.91	31	72.09
TOUAREG	28	36.84	48	63.16
GOURMANTCHE	3	42.86	4	57.14
ALL	320	36.45	558	63.55

TABLE 6 .

RANDOM SUB-SAMPLE. LITERACY OF THE HEAD OF HOUSEHOLD

	LITERACY HEAD OF HOUSEHOLD			
	YES		NO	
	N	PERCENT	N	PERCENT
ETHNIC GROUP				
HAOUSSA	64	36.57	111	63.43
BERIBERI	10	37.04	17	62.96
DJERMA	49	38.28	79	61.72
FEULH	6	31.58	13	68.42
TOUAREG	11	25.58	32	74.42
GOURMANTCHE	1	50.00	1	50.00
ALL	141	35.79	253	64.21

TABLE 7 .

OVERALL SAMPLE. LITERACY OF OTHER MEMBERS OF THE HOUSEHOLD

	LITERACY OTHER MEMBERS OF HOUSEHOLD			
	YES		NO	
	N	PERCENT	N	PERCENT
ETHNIC GROUP				
HAOUSSA	198	57.39	147	42.61
BERIBERI	23	57.50	17	42.50
DJERMA	228	62.13	139	37.87
PEULH	20	46.51	23	53.49
TOUAREG	55	72.37	21	27.63
GOURMANTCHE	4	57.14	3	42.86
ALL	528	60.14	350	39.86

TABLE 8 .

RANDOM SUB-SAMPLE. LITERACY OF OTHER MEMBERS OF THE HOUSEHOLD

	LITERACY OTHER MEMBERS OF HOUSEHOLD			
	YES		NO	
	N	PERCENT	N	PERCENT
ETHNIC GROUP				
HAOUSSA	97	55.43	78	44.57
BERIBERI	14	51.85	13	48.15
DJERMA	64	50.00	64	50.00
PEULH	11	57.89	8	42.11
TOUAREG	31	72.09	12	27.91
GOURMANTCHE	2	100.00	.	.
ALL	219	55.58	175	44.42